National Aeronautics and Space Administration

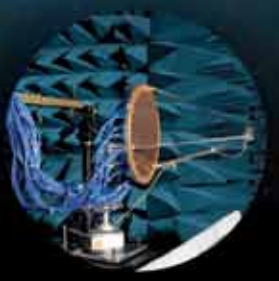
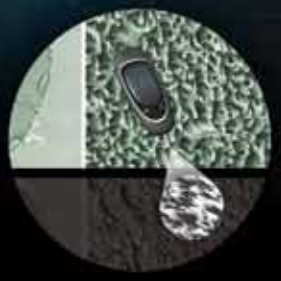










Glenn Research Center

Saluting our most successful technologies and the innovators behind them

2011

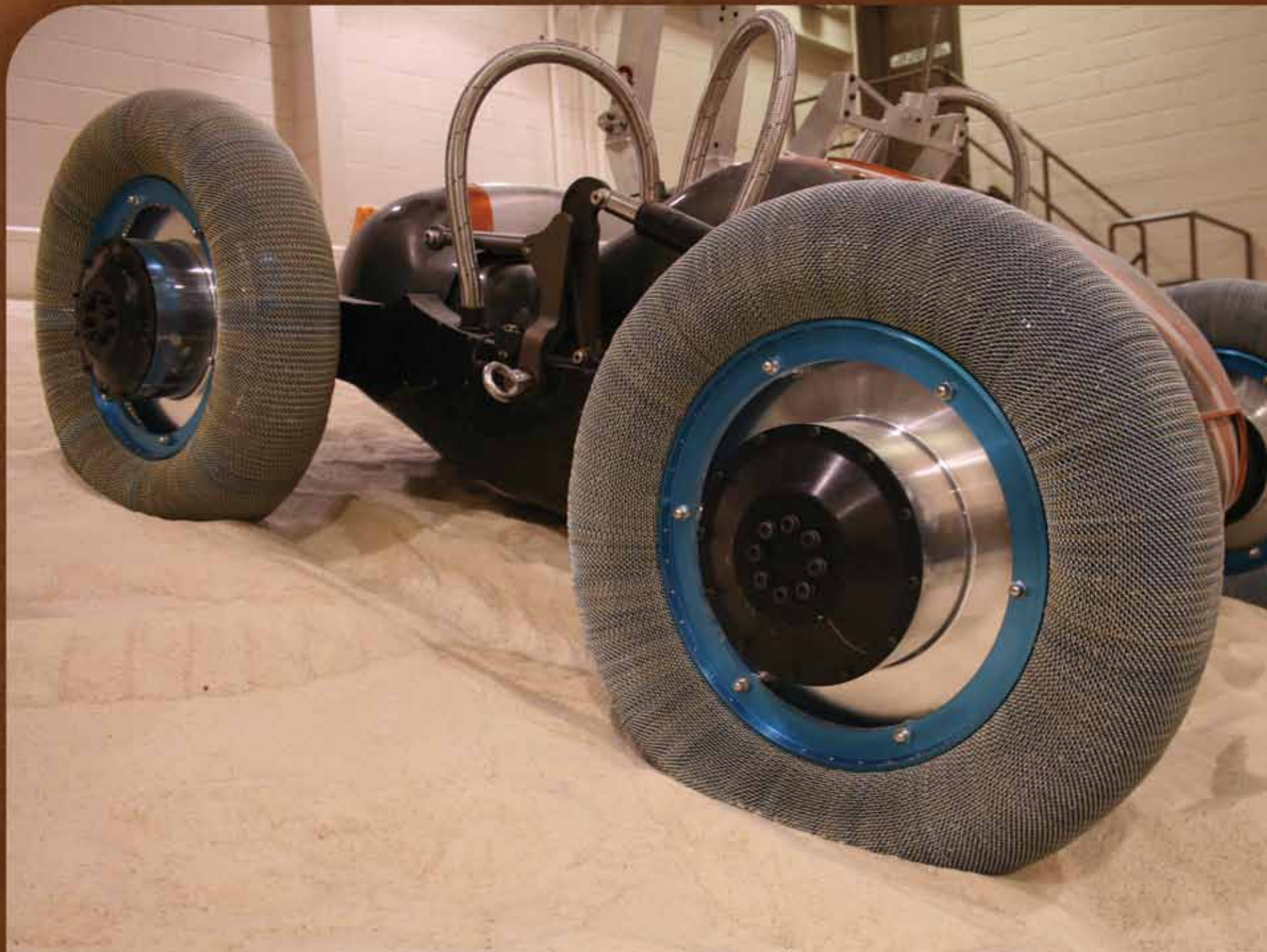
www.nasa.gov

The Spring Tire

2010 R&D 100 Award

Patent and Tech Brief Awards

NASA's partnership with Goodyear Tire & Rubber Company produced an improved tire technology for future exploration missions.



January

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1 New Year's Day
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17 Martin Luther King, Jr. Day	18	19	20	21	22
23 30	24 31	25	26	27	28	29

(l-r) Jim Benzing (Goodyear Tire & Rubber Company), Jim Kish (Goodyear Tire & Rubber Company), and Vivake Asnani (GRC)

Spring tire testing in the Simulated Lunar Operations (SLOPE) Facility.

The GATR Inflatable Satellite Communication System

2010 R&D 100 Award

2010 FLC Midwest Regional Excellence in Technology Transfer Award

Enables Internet access, cell coverage, and phone lines over satellite networks via a compact package that can be deployed in less than an hour.

February

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21 Presidents' Day	22	23	24	25	26
27	28					

(left image, l-r) Robert Romanofsky (GRC) and Kevin Lambert (QinetiQ North America);
(right image) Paul Gierow (GATR Technologies)

Responding to Haiti's 2010 earthquake, GATR Technologies® supplied contingency communications at Port-au-Prince Airport. (Photo courtesy of GATR Technologies.)

The vMetrics™ System

For wireless biometric monitoring

2010 ICB Exceptional Space Act Award

2009 NorTech Innovation Award

Tech Brief Award

Developed by ZIN Technologies and The Cleveland Clinic Foundation under a Small Business Innovation Research contract at NASA's Glenn Research Center.

March

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

(left image) Alan Chmiel (ZIN Technologies, Inc.); (right image) Bradley Humphreys (ZIN Technologies, Inc.)

The ZIN Technologies vMetrics™ system provides physicians an extensible and ambulatory patient-monitoring system that is configurable to meet the monitoring needs of any disease state. (Photos courtesy of ZIN Technologies, Inc.)

LEWICE Ice Accretion Software

2010 NASA Software of the Year Award Runner-up

Software Release Award

Used in the aeronautics community for predicting ice shapes, collections efficiencies, and anti-icing heat requirements.

April

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

(back row, l-r) Colin Bidwell (GRC), Mark Potapczuk (GRC), and Harold (Gene) Addy (GRC); (front row, l-r) Laurie Levinson (GRC) and Bill Wright (ASRC Aerospace Corp.)

Super-cooled large droplet icing on twin otter airplane. (inset) Researchers at the Icing Physics Flow Lab at Case Western Reserve University.

Atomic Oxygen Textured Surfaces

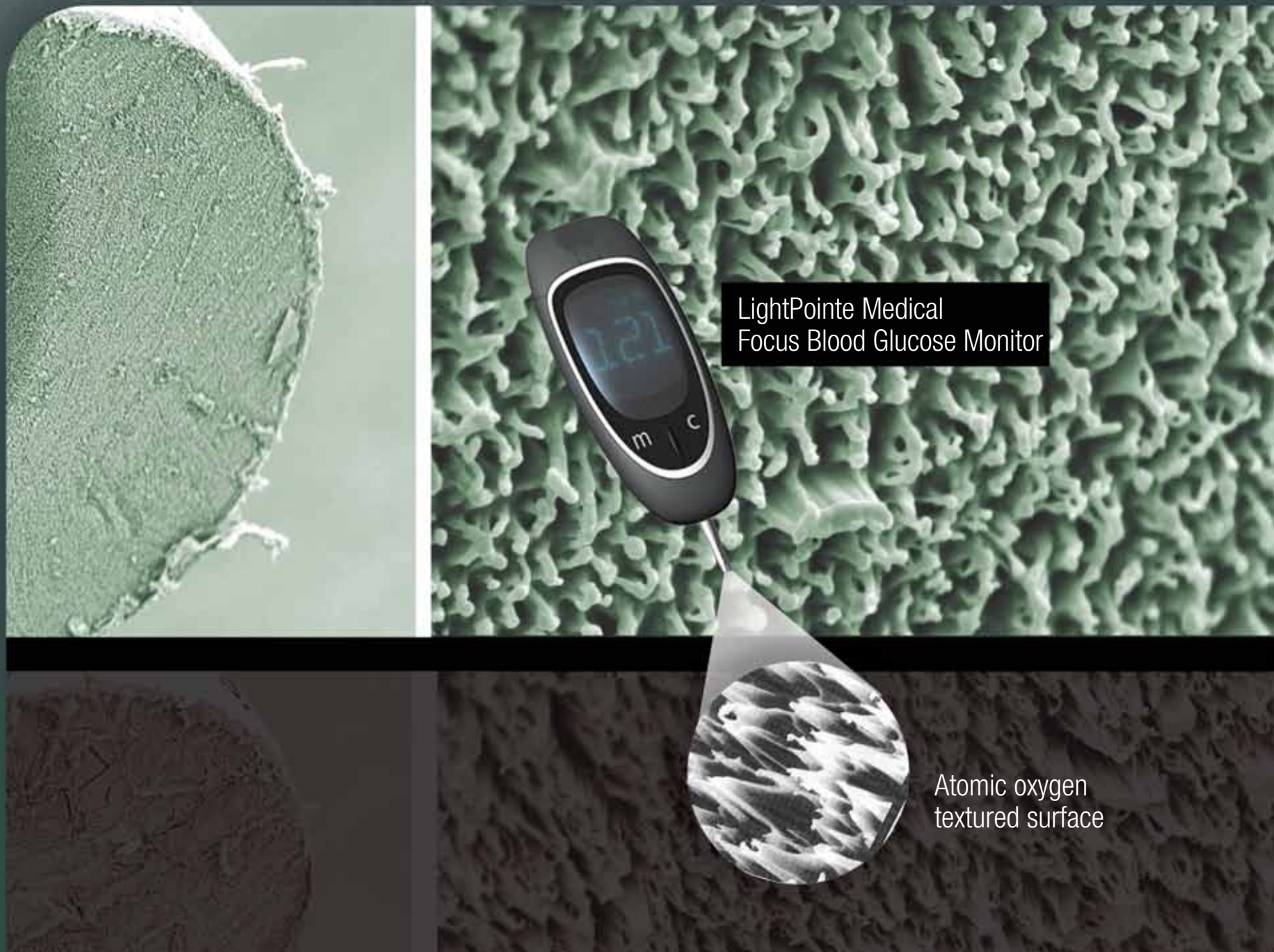
For blood glucose and other analyte monitoring

2009 FLC Excellence in Technology Transfer Award

2008 ICB Exceptional Space Act Award

Patent and Tech Brief Awards

Microscopic cones on the tip surface of optical fibers allow the rapid measurement of blood glucose and other analytes.



May

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30 Memorial Day	31				

(l-r) Debbie Waters (ASRC Aerospace Corp.), Bruce Banks (Alphaport, Inc.), and Sharon Miller (GRC)

Scanning electron microscope images of optical fibers after aluminum coating and hyperthermal atomic oxygen texturing. (inset) LightPointe Medical Focus Blood Glucose Monitor. (Inset photo courtesy of LightPointe Medical.)

Traveling Wave Tube Amplifier

2009 R&D 100 Award

Tech Brief and Board Awards

Developed with L-3 Communications Electron Technologies, Inc., this technology pushes the limits on efficiently transmitting data to the ground for NASA's space exploration missions.

June

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

Rainee Simons (GRC)

The traveling wave tube amplifier for the Lunar Reconnaissance Orbiter (LRO) spacecraft. (inset) The LRO in a stowed position before integration with the Atlas-V launch vehicle.

Optimal Trajectories by Implicit Simulation Program (OTIS)

2009 R&D 100 Award

2009 NorTech Innovation Award

2008 NASA Software of the Year Award

Software Release and Tech Brief Awards

Provides the latest mathematical techniques for solving trajectory optimization problems in a user-friendly interface.

July

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
3	4 Independence Day	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24 31	25	26	27	28	29	30

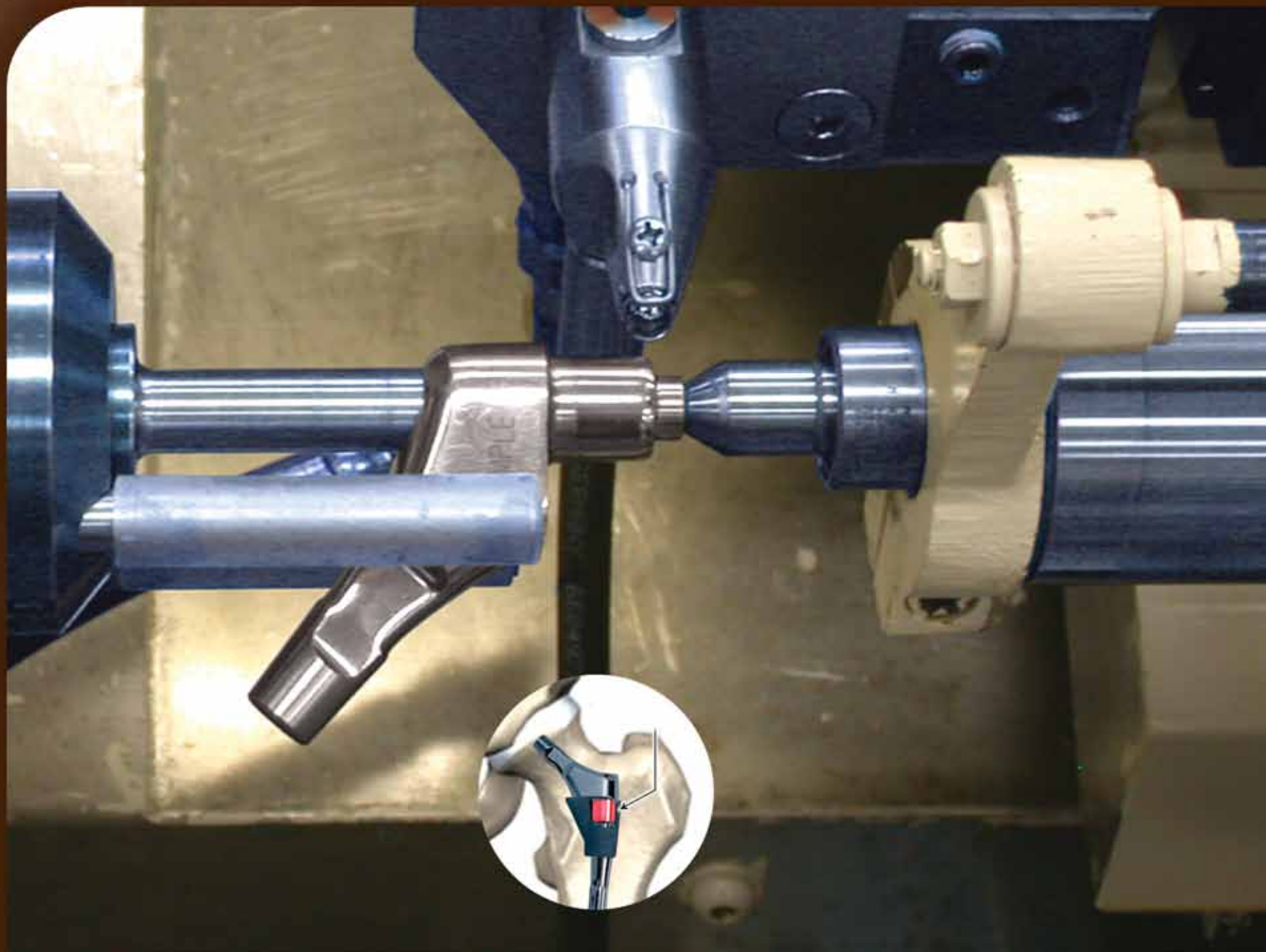
(pictured above l-r) Waldy Sjauw, Robert Falck, and John Riehl; shown on the screen is Stephen Paris (Boeing Phantom Works).

Low-Plasticity Burnishing

2010 R&D 100 Award

Tech Brief and Board Awards

Significantly increases the durability and life span of metal components.



August

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

(left image, l-r) Timothy Gabb (GRC) and Ignacy (Jack) Telesman (GRC);
(right image, l-r) Perry Mason (Lambda Technologies), Paul Prevey (Lambda Technologies), and Doug Hornback (Lambda Technologies)

Low-plasticity burnishing of hip femoral prosthetic implant. (Photo courtesy of Lambda Technologies.)

Silicon Carbide Pressure Sensors

For harsh, high-temperature environments

2008 ICB Exceptional Space Act Award

2007 Licensed to Endevco Corporation

Patent and Tech Brief Awards

Exhibits excellent thermal and mechanical properties, making it well suited for high-temperature electromechanical sensors.

September

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5 Labor Day	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

Robert Okojie (GRC)

Fully packaged silicon carbide piezoresistive pressure transducer. (inset) Used for pressure measurement in jet engine combustion chamber.

The Implantable RF Bio-MEMS Sensor

2009 NorTech Innovation Award

2009 Wall Street Journal Technology Innovation Award Runner-up

2008 Licensed to Endotronix

Patent, Tech Brief, and Board Awards

May help people avoid complications of hypertension, abdominal aortic aneurysms, and congestive heart failure.

October

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
2	3	4	5	6	7	8
9	10 Columbus Day	11	12	13	14	15
16	17	18	19	20	21	22
23 30	24 31	25	26	27	28	29

Félix Miranda (GRC) and Rainee Simons (GRC)

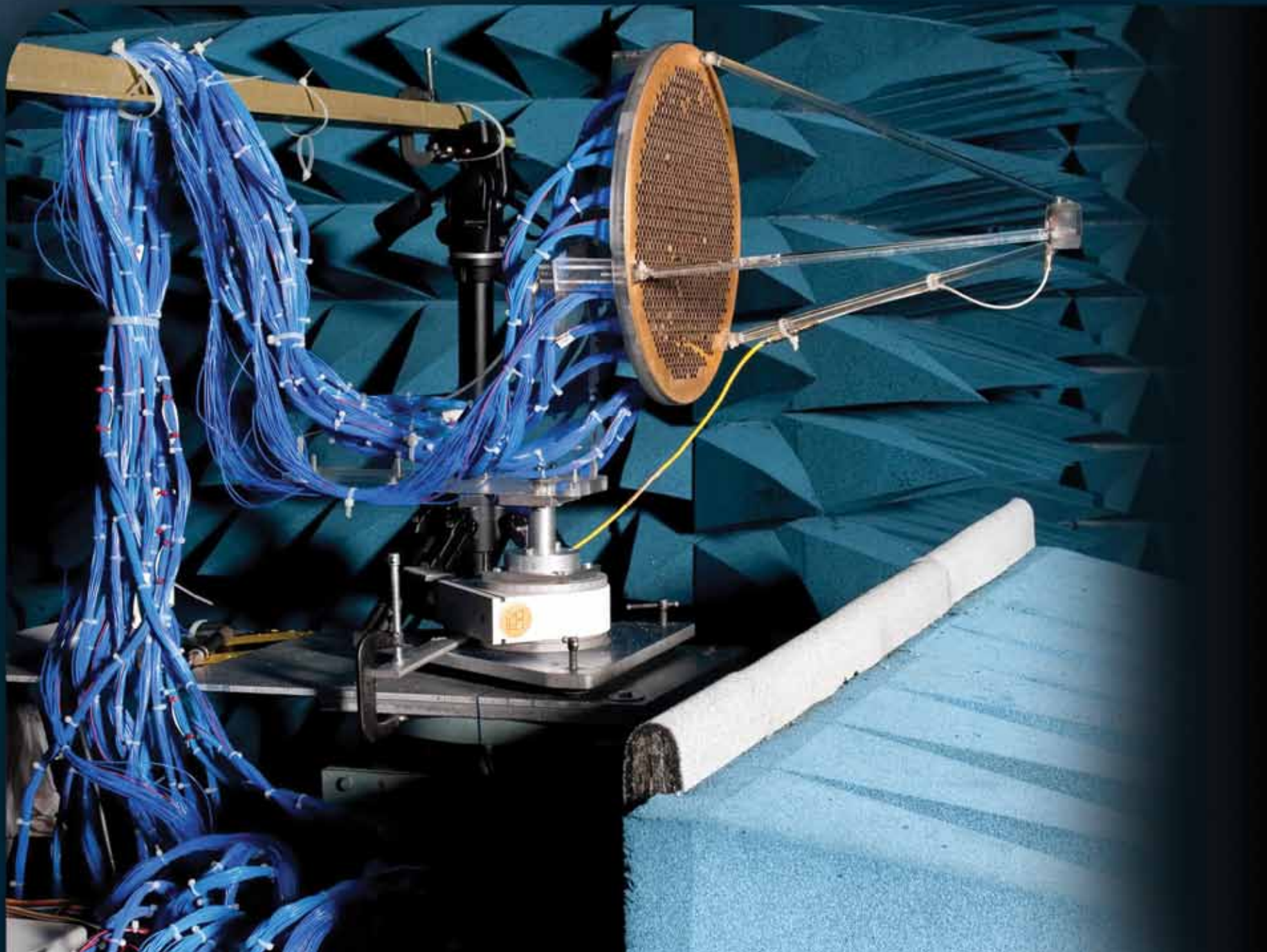
Dr. Anthony Nunez and a team of physicians test prototype devices based on the technology invented at NASA's Glenn Research Center. (Photo courtesy of Endotronix.)

Thin-Film Ferroelectric High-Resolution Scanning Reflectarray Antenna

For aerospace communications

2010 R&D 100 Award

This revolutionary antenna concept enables electronically steerable, high-data-rate communications for commercial use as well as communications vital to future NASA exploration missions.



November

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
6	7	8	9	10	11 Veterans Day	12
13	14	15	16	17	18	19
20	21	22	23	24 Thanksgiving Day	25	26
27	28	29	30			

(l-r) Félix Miranda (GRC), Robert Romanofsky (GRC), Nicholas Varaljay (GRC), Elizabeth McQuaid (GRC), and Frederick Van Keuls (Ohio Aerospace Institute)

Thin-film ferroelectric high-resolution scanning reflectarray antenna for aerospace communications.

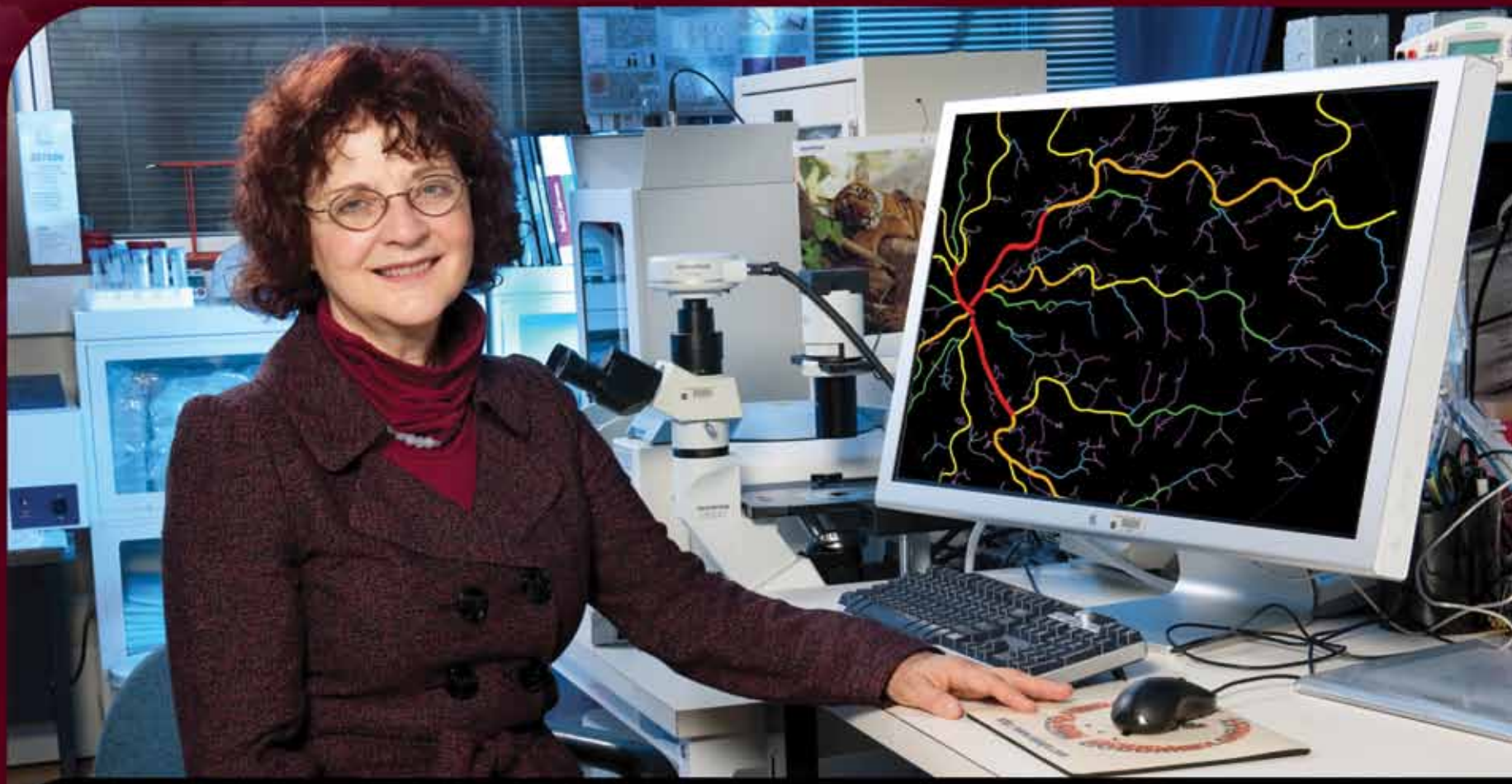
Vessel Generation (VESGEN) Analysis Software

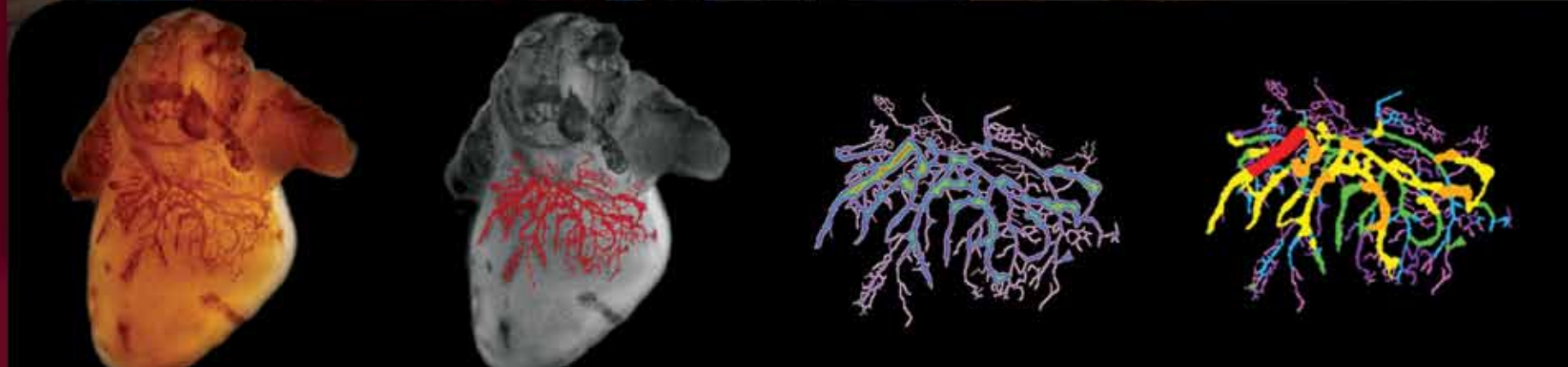
For blood vessel imaging

2010 GRC Technology Transfer Fund Awardee

Tech Brief Award

An automated, user-interactive program that maps and quantifies the effects of vascular therapeutics and regulators on microvascular form and function.





December

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25 Christmas Day	26 Federal Holiday—Christmas	27	28	29	30	31

Patricia Parsons-Wingerter (GRC) shown seated at computer. Image on the monitor depicts VESGEN mapping of blood vessels within the human retina. Lower images depict VESGEN analysis of immature coronary blood vessels during development when vessels are actively remodeling from an amorphous vascular network into a mature vascular tree. (Left-most image of a developing mouse heart courtesy of University Hospitals, Cleveland.)

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Submit Your New Technologies!

Every year innovations developed at NASA centers are patented and commercialized. Some of these inventions have been incorporated into common items we use every day. These technologies bring value to the country, prestige to the center, and monetary rewards to the inventors. Reporting your technologies can be done through an easy step-by-step electronic reporting process used by NASA employees and contractors.

What's in It for You?

Innovators play an important role in NASA's technology transfer and commercialization mission. There are several incentives available to inventors.

- A chance for publication in *NASA Tech Briefs* magazine—$350 per author
- Software Release—$500 each multiple contributors/$1,000 single contributor
- Patent Application—$500 each multiple contributors/$1,000 single contributor
- NASA Inventions and Contributions Board (ICB) Space Act Awards—Based on the value of the contribution, available in amounts up to $100,000
- Annual "Software of the Year" and "Invention of the Year" awards
- Royalties for licensed patents
- Additional awards from the Federal Laboratory Consortium (FLC) for Technology Transfer, the Northeast Ohio Technology Coalition (NorTech), and others

What Is a New Technology?

A new technology is any invention, discovery, improvement, or innovation whether or not patentable, either conceived or first actually reduced to practice in performance of NASA work. This includes new processes, machines, manufactures, and compositions of matter as well as improvements to, or new applications of, existing processes, machines, manufactures, and compositions of matter. New technologies also include new computer programs, and improvements to, or new applications of, existing computer programs.

When to Report New Technology?

Report new inventions, including software, to NASA **as soon as possible** after conception. There is no need to build or test the innovation prior to reporting, but you must provide a detailed description of the technology. You must report technologies before they are presented publicly at tradeshows and conventions and/or before publishing.

Why Report Your Invention?

Reporting new technologies is essential to the achievement of NASA's mission. **NASA employees are REQUIRED to submit a disclosure** for each invention resulting from their work as a government employee.

Where to Submit Your Technologies?

The E-NTR Web site has been set up to help NASA employees and parties under NASA funding agreements to report new technology information directly to NASA via a secure Internet connection.

To submit NTRs go to https://ntr.ndc.nasa.gov

For patenting information, contact Robert Earp (robert.earp@nasa.gov or (216) 433-3663).

National Aeronautics and Space Administration

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